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UNITED STATES

Title: Stand-alone Wash Apparatus
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Field of the invention

[0001] The present invention relates to devices for washing a portion of a user's body, especially the feet and hands.

5 Background of the invention

[0002] Many people spend time outdoors engaged in recreational or leisure activities. Examples include camping, visiting the beach, playing in the yard, or gardening. During these activities, bare feet can become unclean by picking up dirt, blades of grass, sand, or other debris. This debris can present
10 a nuisance when a person would like to, for example, enter a tent, house, or cottage, or before boarding a boat, entering a swimming pool, or putting on footwear. It is generally desired that the feet be clean of debris before a person engage in such activities.

[0003] To wash the feet, it is preferable that a supply of running water
15 be available. Such a supply of water could be provided by municipal water supply systems. However, many places, such as, for example, beaches or campsites, may not have a pressurized water supply. Or, if a pressurized water supply is present, it may not be conveniently located. For example, a tap may be provided along side a house, but if the tap is far from the door to
20 the house or far from the pool, debris may still get tracked into the house or pool. Furthermore, water from a tap at a house or campsite may be quite cold, which could cause discomfort when used to wash one's feet.

[0004] In addition to washing the feet, it is often desirable to wash the hands while, for example, at the beach or campsite, particularly before eating
25 food. However, the same difficulties with respect to a water supply for washing the feet can present themselves in regards to washing the hands.

[0005] It could be convenient to provide a stand-alone wash apparatus for washing the hands or feet (or both) that does not require a pressurized

water supply, and which can easily be erected in any desired location, and transported between various locations.

[0006] Many known devices for foot washing require a pressurized water supply, such as provided by municipal water supply systems.

5 Examples of such devices are disclosed in U.S. Pat. Nos. 2,654,894 (Van Dijck) and 3,925,830 (Delaney).

[0007] U.S. Pat. No. 5,678,259 (Cruz Jr.) discloses a foot washing system that has a compartment with a foot washing mechanism including a water bottle. Weeping lines extend from the bottle between sponges to
10 moisten the sponges when compressed by a user's foot. A hand-held water sprayer with a lead line is also connected to the water bottle, ostensibly requiring a pressurized supply of water for operability.

[0008] Wash devices with shower heads are disclosed in U.S. Pat. Nos. 4,934,001 (Landreth) and 5,161,266 (Hildebrand). The device of Landreth
15 also requires an external pressurized water source, while of that of Hildebrand provides its own pressurized water supply by means of a manually operated air pump that compresses air in a tank filled partly with water and partly with air.

[0009] U.S. Pat. No. 1,330,312 (Figueroa) discloses a bathing device
20 with a shower head and a tank for holding water. The device is adapted for showering the entire body, with the tank and an attached shower head suspended from above, and having curtain extending below the shower head to a tub.

25 **Summary of the invention**

[0010] The present invention provides a generally portable, stand-alone wash apparatus with a self-contained water reservoir that can be used to wash the hands or feet of a user.

[0011] According to one aspect of the present invention, a portable,
30 stand-alone wash apparatus for washing the hands and feet of a user is

provided with a water tank, a support frame supporting the tank above a surface, and at least one water discharge outlet positioned generally below the tank and in flow communication with the tank.

[0012] The apparatus can be of sufficient height to provide a cleaning bay generally below the discharge outlet, and the cleaning bay can have an apertured floor supported by the frame. The frame of the apparatus can be collapsible.

[0013] The tank can be provided with a lid that is of a comparatively large size relative to the tank so that opening the lid provides access to at least a majority of the interior of the tank. At least a portion of the tank can be of a generally transparent material. The tank can be in the form of an inverted water bottle. A filtering element can be provided adjacent the discharge outlet.

[0014] A valve can be positioned upstream of the at least one discharge outlet, the valve being adjustable between open and closed positions wherein, respectively, flow from the tank to the discharge outlet is allowed and prevented. The valve can have biasing means to bias the valve to the closed position. A delay mechanism can be provided to temporarily hold the valve in at least a partially open position, resisting the closing force exerted by the biasing means.

[0015] The valve can be provided with an actuator for moving the valve between the open and closed positions. The actuator can be a lever adapted for manipulation by the hand of a user. Alternatively, the actuator can be a pedal adapted to be manipulated by the foot of a user.

[0016] The apparatus can be provided with water treatment means for treating the water in the tank. The water treatment means can include at least one of the group consisting of disinfectant, deodorizer, Epsom salt, and colouring. The water treatment means can be provided in the form of a dissolving solid block placed in the tank.

[0017] The apparatus can be provided with warming means for increasing the temperature of water in the tank. The warming means can include panels with a reflective surface mounted adjacent the water for directing and redirecting radiant energy towards water in the tank.

- 5 **[0018]** The at least one discharge outlet can include a sprinkler head having a plurality of dispensing apertures. The position of the discharge outlet relative to the frame can be adjustable. A pliant conduit can extend between the tank and the discharge outlet, the conduit being deformable by manipulation by a user.
- 10 **[0019]** The apparatus can have two or more discharge outlets. At least two of the two or more discharge outlets can be at different elevations, defining an upper outlet and a lower outlet.
- [0020]** Handles can be attached to the tank to facilitate carrying the tank. The apparatus can have at least one washing accessory of the group
- 15 consisting of towel hangers, soap dispensers, and a brush proximate the support frame.

Brief description of the drawings

- [0021]** For a better understanding of the present invention and to show
- 20 more clearly how it would be carried into effect, reference will now be made by way of example, to the accompanying drawings that show a preferred embodiment of the present invention, and in which:

[0022] Figure 1 is a side view of an embodiment of a wash apparatus according to the present invention;

- 25 **[0023]** Figure 2 is a front view of the apparatus of Figure 1;

[0024] Figure 3 is a side view of the apparatus of Figure 1 with some modifications;

[0025] Figure 4 is an enlarged view of a valve element of the apparatus of Figure 1;

[0026] Figure 5 is an enlarged view of an alternate embodiment of the valve element of Figure 4;

[0027] Figure 6 is a side view of the apparatus of Figure 1 with a modified valve actuator;

5 **[0028]** Figure 7 is a side view of a portion of the apparatus of Figure 1 showing a tank portion in greater detail;

[0029] Figure 8 shows the apparatus of Figure 1 with a modified tank embodiment;

10 **[0030]** Figure 9 is a front view of the apparatus of Figure 2 showing a frame portion of the apparatus in greater detail;

[0031] Figure 10 is a side view of the apparatus of Figure 1 with an alternative conduit construction; and

[0032] Figure 11 is a side view of an alternative embodiment of the apparatus of Figure 1 including features for washing the hands of a user.

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Detailed description of the invention

20 **[0033]** A wash apparatus according to the present invention is shown generally at 10 in Figures 1 and 2. The wash apparatus 10 has a water tank 12 for holding water 13. The water tank 12 is supported above a surface 15, such as, for example, the ground, by a support frame 14.

25 **[0034]** The frame 14 of the apparatus 10 has a sufficient height to provide a cleaning bay 16 positioned generally above the ground and below a water discharge outlet 18 extending from the tank 12. In the embodiment illustrated, the cleaning bay 16 has a floor 17 comprising an apertured panel that is attached to the frame 14 above the ground 15. The floor 17 can be used conveniently as a footrest, to support the foot of a user of the apparatus 10 to assist a person in maintaining his or her balance when washing a foot. The floor 17 can be oriented generally horizontally, or alternatively, at a

convenient incline with the front edge 17a (nearest the user) at a lower elevation than the rear edge 17b.

5 **[0035]** The water discharge outlet 18 is provided generally below the tank 12 and in flow communication with the tank 12. A conduit 20 can extend from an exit hole 21 in the tank 12 to the discharge outlet 18 to provide water flow from the tank 12 to the outlet 18. The discharge outlet 18 provides a stream of water in which a user can place a foot to be cleaned. In the embodiment illustrated, the discharge outlet 18 comprises a sprinkler head having a plurality of dispensing apertures 19 for dispensing water in a plurality of streams. The sprinkler head can be similar to known showerheads commonly used for personal showers, although the size of the apertures 19 will generally need to be larger than in known showerheads since the water flow in the apparatus 10 is not provided by the relatively high pressure water supply of a residential plumbing system.

15 **[0036]** In the embodiment illustrated in Figures 1 and 2, the discharge outlet 18 is positioned in an upper portion of the cleaning bay 16, below the tank 12. However, as best seen in Figure 3, the discharge outlet 18 need not be directly underneath the tank 12, but can be off to one side of the tank 12. Locating the outlet 18 laterally outwardly from the tank 12, towards a user, can be convenient for providing improved access and visibility to the outlet 18. In either case, the outlet 18 is preferably at an elevation that is below the elevation of the exit hole 21 of the tank 12 so that water 13 will run freely from the tank 12 to the discharge outlet 18 under the force of gravity.

25 **[0037]** Referring again to Figures 1 and 2, a valve 22 can be provided for adjusting the flow of water 13 from the tank 12 through the discharge outlet 18. More particularly, the valve 22 can have open and closed positions, wherein, respectively, flow from the tank 12 to the discharge outlet is permitted and prevented. An actuator 24 is provided for moving the valve 12 between the open and closed positioned.

30 **[0038]** Referring to Figure 4, the valve 22 can be a self-closing, delay action type valve, similar to the style of valves commonly used in self-closing

taps. Accordingly, the valve 22 can have biasing means 26 such as, for example, but not limited to, a torsion spring, for biasing the valve 22 to the closed position, with a delay mechanism (not shown) to at least temporarily resist the closing force of the biasing means. To open the valve, the actuator
5 24 is manipulated so that the valve 22 moves to the open position, against the force of the biasing means 26. The delay mechanism, which can be, for example, but not limited to, a self-contained valve damper, temporarily holds the valve 22 in at least a partially open position, after which the biasing means 26 moves the valve 22 back to the closed position.

10 **[0039]** A self-closing valve can be helpful in conserving the water in the tank 12, and in reducing waste of the water that may otherwise occur if the valve 22 is mistakenly left open or improperly closed after use. It can also provide additional convenience in that a person need not perform the additional task of manipulating the actuator 24 after having washed his or her
15 feet. The delay action in the valve 22 allows both hands to be free for washing a foot after the valve 22 has been actuated, while still providing the benefits of a self-closing valve.

[0040] Other configurations of the valve 22 can also be used with the apparatus 10. For example referring to Figure 5, the valve 22 can have a
20 check-valve configuration for automatically sealing the exit hole 21 in the tank 12 if the tank 12 is lifted away from the frame 14. In such a configuration, the valve 22 has a sealing portion 30 fixed to the tank 12, and an actuating portion 32 fixed to the conduit 20. The exit hole 21 in the tank 12 has a throat 34 extending between the tank 12 and the conduit 20, and the sealing portion
25 30 is mounted in the throat 34. The sealing portion 30 of the valve 22 has a closure member 36 that is pivotable between unblocked and blocked positions with respect to the cross-sectional area of the throat, which correspond respectively, to the open and closed positions of the valve 22. A torsion spring 26 bears against the sealing portion 30 to bias the sealing portion to
30 the blocked (closed) position.

[0041] The actuating portion 32 of the valve 22 is mounted within the conduit 20 adjacent the throat 34. The actuating portion 32 comprises a stem 38 that is slidably mounted within the conduit 20, and movable between advanced and retracted positions, wherein, respectively, the closure member
5 36 is moved between the unblocked and blocked positions. The actuator 24 of the valve 22 is operatively connected to the stem 38 for moving the stem 38 between the advanced and retracted positions. A delay mechanism 28 in the form of a frictional collar is provided around a portion of the stem 38, to exert a frictional force against the stem 38 and thereby resist the closing force
10 exerted by the torsion spring 26.

[0042] Referring to Figure 6, the actuator 24 for the valve 22 can further comprise a lever 40 that extends from the valve 22 to facilitate the accessibility and operation of the valve 22. In the embodiment illustrated, the lever 40 extends laterally outwardly from underneath the tank 12, such that it
15 may conveniently be pressed downward by the hand of a user to move the valve 22 from the closed position to the open position.

[0043] Alternatively to, or in addition to, the lever 40, the actuator 24 may comprise a foot operated pedal 42 and a linkage 44 extending between the pedal 42 and the valve 22. Depressing the pedal 42 moves the valve 22
20 from the closed to the open position to dispense a flow of water from the discharge outlet 18. In the embodiment illustrated, the pedal 42 is mounted to the floor 17 of the cleaning bay 16. Providing the pedal 42 allows hands-free operation of the valve 22, and can provide a flow of water precisely when needed for cleaning a foot. Having the hand lever 40 in addition to the pedal
25 42 can be convenient for rinsing the floor and pedal area between uses, or if a flow of water while elevating the foot above the pedal 30 is desired.

[0044] Referring now to Figure 7, further details of the tank 12 will be provided. The tank 12 has a base 50, sidewalls 52, and a lid 54. The lid 54 is preferably of a large size relative to the size of the tank 12 so that opening the
30 lid provides access to at least a majority of the interior of the tank 12. This amount of accessibility to the tank 12 can make it easier to refill the tank 12

with water when necessary, and facilitates removal of debris or other foreign matter from the tank 12.

[0045] In the embodiment illustrated, the lid 54 comprises two hinged cover panels 56 each of which comprise about half of the top surface of the tank 12 between the sidewalls 52. The panels 56 can swing open along hinges 58 provided along the upper edges of two opposed sidewalls 52 of the tank 12. The base 50 of the tank 12 is also provided with the exit hole 21 for releasing water from the tank 12 to the discharge outlet 18. A filtering element 60 such as, for example, a wire screen or inverted basket structure can be provided adjacent the hole 21 to prevent debris or other foreign matter from plugging the valve 22 or discharge outlet 18.

[0046] The tank 12 can be constructed of any suitable material capable of providing a water-tight enclosure. In the embodiment illustrated, the tank 12 is constructed of plastic material, which is strong, durable and relatively lightweight. The plastic material in the embodiment illustrated is also substantially transparent, so that the level of water 13 in the tank 12 is readily visible without need of opening the lid 54 and looking inside the tank 12. Transparent sidewalls can also facilitate warming the water in the tank 12, as described further hereinafter.

[0047] Having a self-contained water supply in the tank 12 provides opportunity for treating or conditioning the water as may be desired. For example, and with reference to Figure 7, the apparatus 10 can be provided with warming means 70 for increasing the temperature of the water in the tank 12. The warming means can be in the form of, for example, an electrically powered heater, solar power, or simply heat from ambient air in the vicinity of the tank 12. The warming means 70 can be advantageous since water used to refill the tank 12 may come from such sources as a lake, well, or a tap (if available), and will typically be relatively cold. Warming the water in the tank 12 may provide increased comfort to users of the apparatus 10.

[0048] In the embodiment illustrated, the warming means 70 comprises reflective surfaces 72 placed adjacent the tank 12 to reflect radiant thermal

energy 74 into the water 13 contained in the tank 12. The reflective surfaces 72 can comprise a fabric (or other material) with a brightly coloured or shiny surface affixed to the base of the tank 12, and to a lower portion of the sidewalls of the tank 12. Radiant energy 74 supplied by the sun can pass
5 through the lid and upper portions of the sidewalls of the tank 12, to be at least partially absorbed by the water in the tank 12. Radiant energy 74 passing through the water 13 is reflected by the surfaces 72 back toward the water 13 in the tank 12 for further absorption and warming of the water 12. Water is known to have a relatively high thermal mass, so that even during
10 periods where the amount of incoming solar radiation is reduced, the water in the tank 12 can temporarily store the previously absorbed thermal energy.

[0049] Other conditioning or treatment of the water in the tank 12 can also be provided. Such treatments can include, for example, but not limited to, disinfectants, deodorizers, and Epsom salt, which can improve the
15 cleaning action provided by the apparatus 10. The treatments can be provided in the form of a slowly dissolving solid block 78 placed in the tank 12.

[0050] Conditioning or treating of the water can also be provided in the form of a colour additive to add an appealing colour to the water. Colouring the water can provided added fun or amusement for users, such as for
20 children. The colour additive can be a relatively light colour, so that the cleaning action provided by the apparatus 10 is not compromised, and can be of a user-friendly and environmentally safe composition.

[0051] Referring now to Figure 8, in an alternative embodiment, the tank 12 comprises an inverted water bottle 64, such as those known for
25 providing drinking water in office or residential water coolers. The water bottle 64 has a check-valve style cap 66 that engages an actuating element 68 mounted adjacent the conduit 20 supported by the frame 14. The actuating element 68 can be movable, so that the cap 66 and actuating element 68 combine to provide the valve 22. Alternatively, the actuating element 68 can
30 be fixed so that the check valve cap 66 provides continuous flow when the

bottle is installed on the frame 14, and a separate valve 22 can be provided along the flow path between the tank 12 and the discharge outlet 18.

[0052] Referring now to Figure 9, further details of the support frame 14 will be provided. The support frame 14 is constructed of uprights 80 that
5 extend generally upwardly between from the ground 15 and an upper support surface 82. The surface 82 is adapted to bear the weight of the tank 12 with water 13. In the embodiment illustrated, the support surface 82 is a generally planar surface on which the tank 12 can be placed, without need for securing the tank 12 to the frame 14. This unattached yet secure support configuration
10 can allow the tank 12 to be easily removed from the frame 14 for refilling of the tank 12 or for transporting the apparatus 10 from one location to another. The surface 82 can have an aperture (not shown) to allow for connection to the conduit 20. Furthermore, in the embodiment illustrated, lugs 81 are provided at the lower ends of the uprights 80 to receive stakes 83 for
15 anchoring the apparatus 10 to the ground 15. Wheels (not shown) can also be provided at the lower ends of at least two adjacent uprights 80 to further facilitate moving the apparatus 10 from one location to another.

[0053] The members of the support frame 14 can be constructed of any suitable material such as, for example, but not limited to, metal, plastic or
20 wood. The members can be secured to each other to form a fixed, rigid structure, or they can be movably secured relative to each other to provide a collapsible support structure. In the embodiment illustrated, the frame is collapsible, having pivot joints 84 for folding the uprights 80, and releasable struts 86 extending between the uprights 80 and the support surface 82. The
25 floor 17 is releasably secured to frame 14 to permit collapsing of the frame 14. Collapsibility of the frame 14 can facilitate portability of the apparatus 10.

[0054] The apparatus 10 can be provided with various additional features. For example, handles 88 can extend from the tank 12 to facilitate carrying the tank 12 and/or the apparatus 10 (Figures 1 and 2). The
30 apparatus 10 can also be provided with various wash accessories such as, for example, but not limited to, towel hangers, soap dispensers, and a scrub

brush positioned proximate the support frame 14. In the embodiment illustrated, the handles 88 can also be used to hold towels 90, or separate towel hangers 92 can be provided (Figure 3). The towels 90 can conveniently be used for drying feet or hands after washing. A soap dispenser 94 is
5 secured to the tank 12 of the apparatus 10 so that a supply of soap is readily available for users of the apparatus 10 (Figures 2 and 3). A scrub brush 96 is mounted to the floor 17 of the cleaning bay 16 (Figure 2).

[0055] Furthermore, the apparatus 10 can be provided with means for adjusting the position of the discharge outlet relative 18 to the frame 14. Such
10 adjustment means can be provided, for example, by attaching an elongate strut to the frame 14 and releasably securing the outlet 18 to the strut. The conduit 20, extending between the tank 12 and the outlet 18, should be flexible and provide sufficient slack to allow adjustment of the position of the outlet 18. Alternativley, as seen in Figure 10, the conduit 20 can be of a pliant
15 material that can be manipulated into various positions. Such a pliant conduit 20 can be bent into a desire shape, but retains its shape when released, so that the position of the discharge outlet relative 18 to the frame 14 can be conveniently adjusted.

[0056] Referring now to Figure 11, the wash apparatus 10 can be
20 provided with two discharge outlets 18a and 18b. The discharge outlets 18a and 18b can be at different elevations, the outlet 18a defined as an upper outlet, and the outlet 18b defined as a lower outlet. The frame 14 can have a sufficient height so that the upper outlet 18a is conveniently positioned for directing water on the hands of a user. The lower outlet 18b can be
25 positioned to direct water on the feet of user. Separate valves 22a and 22b can be provided to control water flow through the outlets 18a and 18b, respectively. Separate foot pedals 42a and 42b can be provided to actuate the valves 22a and 22b. The foot pedal 42a can be provided along the ground 15, and can conveniently control water flow for hand washing so that
30 dirty hands (prior to washing) or wet hands (after washing) need not manipulate a hand actuator.

[0057] While preferred embodiments of the invention have been described herein in detail, it is to be understood that this description is by way of example only, and is not intended to be limiting. The full scope of the invention is to be determined from reference to the appended claims.